

state by the existence of an alteration in the medulla, exercising on the heart a moderating influence through the pneumogastric and the cervical sympathetic.

Finally, in the article *Pouls* in the *Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques*, by Dr. Aug. Rigal, the permanently slow pulse is mentioned as coëxistent with syncope and epileptiform attacks that lead us to refer all these symptoms to a disorder of medullary innervation in which an abnormal excitation of the nuclei of the pneumogastric will account for the retarded cardiac impulse, and to be considered as the indication of a condition which, with a deceptive appearance of harmlessness, frequently terminates in sudden death. We find also, in support of this theory of cardiac retardation, some observations reported by Rosenthal, and by Th. Halberton, in which slow pulse was the sequence of an interesting injury to the cervical cord, and a case of Thornton's where the same phenomenon was observed in a syphilitic female, presenting the symptoms of cerebral syphilis. We have also observations by Stokes and M. Cornil, in which the slowness of the pulse was apparently due to a fatty condition of the myocardium.

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WRITERS' CRAMP.—Wernicke has lately found a peculiarity which, if present in all instances, sheds an entirely new light on this affection. In an ordinary case reported to the Berlin Physiological Society (*Arch. f. Phys.*, 1881, p. 197), he observed an isolated paralysis of the extensor pollicis longus muscle, which muscle according to Duchenne, is not immediately concerned in the act of writing. However, it is of decided influence on the position of the thumb, and hence the author believes the paralysis to be an etiological factor in the disease.

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THE NEURO-MUSCULAR HYPEREXCITABILITY IN HYSTERIA.—The following is an abstract of a more extensive memoir in the *Archives de Neurologie*, by MM. Charcot and Paul Richer, which we take as published in advance in the *Gaz. des Hôpitaux*, No. 37, Mar. 29.

Among the somatic phenomena that characterize the condition of artificial hypnotism in hysterical cases, there is one that consists in a special aptitude of the muscle to contract under the influence of mechanical excitations, and which one of us, at the beginning of our researches on the subject in 1878, has described under the name of *neuro-muscular hyperexcitability* (Charcot).

Neuro-muscular hyperexcitability pertains to only one phase, or, if it is preferred, one mode, of hypnotic slumber. It is one of the fundamental characters of the artificial hysterical lethargy (*léthargie hystérique provoquée*) (Charcot). It must not be confounded with the phenomena of true catalepsy in the *état cataleptique*. Finally, there is a third form of nervous slumber, resembling more nearly the so-called "magnetic" sleep, and altogether different from the phenomenon now under consideration. The principal characteristics of these three kinds of hypnotic slumber have been described in detail by one of us in a recent memoir on hysteria epilepsy (Richer).

The muscular contraction consequent to the nervous condition designated as neuro-muscular hyperexcitability, is not merely the result of direct mechanical muscular action; it follows equally excitations applied to the tendons or to the nerves.

I. *Excitation of the tendons.* The exaltation of the tendon reflexes is one of the most constant characters of the hysterical lethargy. It may exhibit itself in two different ways:

1. By extension and diffusion of the reflex action.
2. By modification of the muscular contraction resulting from it.
  - a. The contraction is more lively without increasing in duration.
  - b. The duration of the contraction is prolonged, and there is a tendency for it to become transformed into contracture.
  - c. The contraction becomes permanent; there is actual contracture.

These two kinds of exaltation of the tendon reflexes may exist either singly or united in the same individual.

Shock is not the only method of mechanical excitation which, applied to the tendon, provokes contracture. This follows equally simple friction or pressure.

These researches on the modifications produced in the tendon reflexes under the influence of hypnotism, tend to unite the phenomena of the neuro-muscular hyperexcitability and that of the tendon reflexes, of which it is, after a fashion, only the highest and most delicate expression.

II. *Excitation of the nerves.* The mechanical excitation of the nerves causes contracture of the muscles to which they supply branches.

Thus in exercising pressure on the ulnar nerve behind the olecranon, the hand contracts itself in a characteristic attitude, the

reason of which is to be found in the physiological action of the muscles of the forearm and of the hand innervated by this nerve, and which we may designate the *griffe cubitale*.

The same is the case with the median and radial nerves, which, when mechanically excited, cause various characteristic attitudes of the hand, explained by the distribution of the branches of these nervous trunks.

III.—*Excitation of the muscles.* The contraction that follows the direct excitation of the muscular mass is easily demonstrated. Our experiments upon the muscles of the neck (sterno-mastoid), upon those of the trunk (deltoid, trapezius, etc.), of the arm and forearm, have led us to the following conclusions:

*a.* Excitation applied to a limited portion of a large muscle causes contraction of the whole mass.

*b.* The contraction of one muscle, produced under these conditions, almost invariably causes the simultaneous action of its synergetic muscles.

IV. In the *face* this neuro-muscular hyperexcitability presents some special features. The muscles, the same as in the members, are both directly and indirectly excitable by mechanical means, but the excitation only causes a temporary muscular contraction, never a contracture.

Therefore, with ample mechanical excitation, we can reproduce on our patients the majority of the experiments of Duchenne (of Boulogne) on the partial action of the muscles of the face.

These facts we have stated are interesting in a double point of view:

In a clinical sense, we find in the regular production of these phenomena certain diagnostic signs that put the observer in position to detect simulation.

In a physiological point of view, they may aid in the solution of more than one problem pertaining to the science of life.

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ALTERATIONS OF THE NERVES IN CHRONIC RHEUMATISM.—MM. Leloir and Degerine reported to the Société de Biologie, Apr. 2 (abst. in *Le Progrès Médical*), that in case of chronic rheumatism, with considerable muscular atrophy and rapid eschars, they found the cutaneous nerves adjacent to the eschars affected with atrophic parenchymatous neuritis. They thought that the alteration in the nerves was anterior to the eschars, and saw evidence of this in the rapidity of the ulceration itself. The histological examination of the cord remained yet to be made.

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